

Remarks/Arguments

Preliminary Matters

Claims 1-7 were originally filed in the above-identified application. With this Amendment, claims 4-7 are being canceled, and claims 8-10 are being added. Thus, claims 1-3, 8-10 are now the pending claims in this application.

Applicants' invention relates to a method for manufacturing an electro-acoustic transducer that has a layer of heat-curing and UV-curing adhesive between a frame and a magnet. Because the adhesive layer is viscous and the magnet is attracted to the frame, a portion of the adhesive is pushed out. The frame-magnet laminate is first exposed to UV radiation and the portion of adhesive that pushed out is cured. This prevents evaporation and scattering of the pushed out portion of the adhesive that occurs during the high temperature process of heat-curing that follows after the UV irradiation.

35 U.S.C. § 103

Claims 1-7 were rejected under 35 U.S.C. § 103(a) as being obvious over Sone (U.S. patent no. 5,432,758), in view of Loctite (World Design Handbook 2nd Edition) for reasons stated on pages 2-3 of the Office Action. It is respectfully submitted, however, that the claims as amended are patentable over the art of record for the reasons set forth below.

Applicant's invention, as recited by claim 1, includes features that are neither disclosed nor suggested by Sone and Loctite, namely:

...irradiating UV light to the laminate from above the magnet to cure a portion of the adhesive layer, the portion being a crept out portion of the adhesive layer;

heating, after the UV irradiation the frame-magnet laminate to cure a remaining portion of the adhesive layer;...

Sone teaches a manufactured electro-acoustic transducer comprising a frame and a magnet, and forming a frame-magnet laminate by disposing a layer of adhesive between the

frame and magnet. Sone, however, does not teach the adhesive material used to attach the electrical components nor irradiating UV light from above the magnet to cure a crept out portion of the adhesive prior to heating. Loctite teaches using a UV-curing adhesive for bonding. Loctite also teaches applying a secondary curing system, such as heat, for curing areas of the adhesive where the UV missed. Loctite, however, neither discloses nor suggests that the crept out portion of the adhesive layer is first UV irradiated from above the magnet and then heat cured. These features are found in the originally filed application at page 5, lines 4-22. No new matter has been added.

It is because Applicant's perform the step of irradiating UV light to the laminate that the following advantages are achieved. According to Applicant's specification on page 5, lines 17-22, the advantage of UV irradiating the crept out portion of the adhesive layer before heat curing the frame and magnet, is to "suppress evaporation and scattering of the adhesive 6a during the heat-curing process." As such, the combination of Sone and Loctite will not yield the advantages disclosed by the Applicants. In the Office Action, it was asserted that it would have been obvious from Sone, in view of Loctite to make use of a heat and UV curing adhesive for quick setting and insuring complete cure. The Office Action further suggests the UV irradiation of the crept out portion of the adhesive is well-known in the art of attaching electrical components for "increasing the adhesion area" to increase the desired bond strength. This is not true, however, in the Applicants' exemplary embodiments. The purpose of the first UV curing as disclosed by the specification on page 5, lines 4-22 is to avoid an evaporation of low molecule compounds included in the adhesives at a time of heat curing.

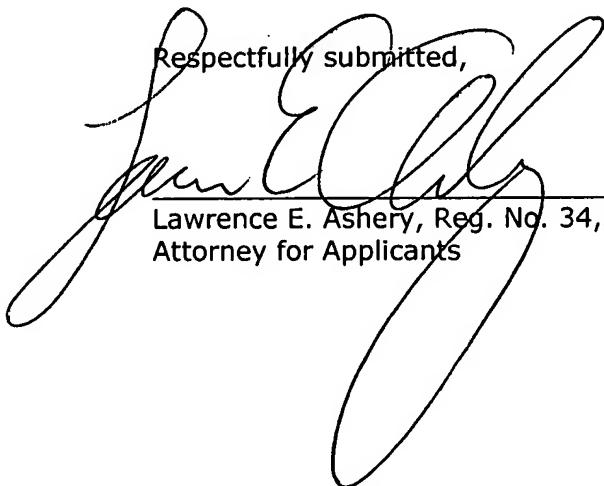
Applicant's invention, as recited by claim 1, also includes the feature of irradiating UV light from above the magnet. The advantage of this feature as disclosed on page 9, lines 1-13, is to seal the gaps, cracks, and voids from which the adhesive seeps out (see Figures 1 and 2). By irradiating UV light from above the magnet, the areas where the adhesive seeps out is sealed and the upward channels of evaporating/scattering adhesive are blocked during the heat-curing process. This prevents adhesive from sticking to the surface of the diaphragm. Thus, the purpose of irradiating UV light from above the magnet is not to increase the adhesive area. The main purpose of the UV curing is to avoid the evaporation/scattering of the crept out portion of the adhesives and is completely different than what is asserted in the Office Action.

Accordingly, for the reasons set forth above, claim 1 is patentable over Sone, in view of Loctite. Furthermore, dependent claims 2 and 3 are patentable by virtue of their dependency on the allowable base claim. Newly added independent claim 8, while not identical to claim 1, include features similar to claim 1. Thus, claim 8 is also patentable over the art for the reasons set forth above. Claims 9 and 10 are dependent upon claim 8 and are patentable for their dependency on the allowable base claim. As such, for the reasons set forth above, claims 1-3 and 8-10 are patentable. Withdrawal of the rejection under 35 U.S.C 103(a) is respectfully requested.

Conclusion

In view of the amendments and arguments set forth above, the above-identified application is in condition or allowance which action is respectfully requested.

Respectfully submitted,


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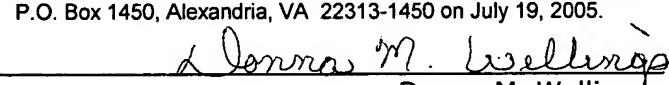
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Dated: July 19, 2005

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